

**ELACHISTA NOBILELLA ZELLER, 1839 (LEP.: ELACHISTIDAE),  
A MICRO-MOTH NEW TO BRITAIN**

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**Abstract**

*Elachista nobilella* Zeller is introduced to the British list, characters for separation from similar species described, and its biology discussed.

**Introduction**

On 5 June 2003 GAC was surveying for the UK BAP priority leaf beetle *Cryptocephalus nitidulus* Fabricius (Col.: Chrysomelidae) at White Downs near Dorking in Surrey. As usual, other insects encountered were recorded and these included a small elachistid moth, assumed in the field to be *Elachista gleichenella* (Fabricius).

On closer examination at home this provisional identification was called into doubt. The wings were black with silvery markings but the pattern more resembled *Elachista apicipunctella* Stainton. Bland (1996) keys *apicipunctella* among the species with metallic sheen to the pale markings of the forewing, while Traugott-Olsen & Nielsen (1977) include it in the species with white markings. However, *apicipunctella* has a white head and this specimen did not. Clearly dissection was called for, and this is where things started to go wrong.

The macerated specimen, a female, showed characters that were clearly wrong for *gleichenella* and for the other species with silvery markings. The signum was obviously different, but, more interestingly, the ovipositor lobes were strongly flattened and heavily sclerotised, quite unlike any British species. Unfortunately, between examining the genitalia and attempting to make a mount the signum was lost and only the ovipositor lobes could be mounted. A glance through Traugott-Olsen & Nielsen (*loc. cit.*) suggested *nobilella* as a potential candidate, and it was decided to look for more material the following year.

On 31 May 2004 both authors were looking for bilberry associated species on the Surrey greensand at Hurtwood near Peaslake, JP, whilst sweeping the bilberry, caught a specimen of an elachistid which was black with silvery spots. By sweeping the bilberry and nearby grasses we were both able to find a few more specimens. Examination at home suggested that these were the same species as GAC had taken at White Downs the year before. The site was visited again on 9 June with John Langmaid and Bob Palmer, and good numbers of the moth seen. By this stage there was little doubt that the moth was *nobilella*, a species not previously recorded from the British Isles.

**Identification**

*Elachista nobilella* (Fig. 1) is amongst the smaller species of elachistid, with a wingspan of 6.5-8 mm. The forewing is dark fuscous with silver markings

comprising a basal area, extended a little along the dorsum, a complete fascia just before the middle (occasionally interrupted at the fold), a costal and a tornal spot together with a third spot between the apex and tornus. The head is dull-metallic leaden and the antennae dark becoming greyish-white apically, the apical third weakly serrate.



Fig. 1. *Elachista nobilella* – adult

As mentioned previously, the position of the markings resemble *apicipunctella*. However, in that species the markings are white as is the head. It also resembles *gleichenella*. In that species the apical spot is usually united with the costal and tornal spots to form a chevron, but in worn or damaged specimens this is not always obvious. Both these species are rather larger than *nobilella*.

#### Male genitalia

The components, illustrated in a format comparable with Bland (1996) are shown in Fig. 2. The uncus lobes are short and widely separated. The valva is narrow at the base, the costa well developed and with a hump distally, and the cucullus rounded with no apical hook or projection present. The juxta processes are narrow and with pointed apices. The vinculum is rather long with a prominent saccus. The aedeagus is straight and slender, slightly more bulbous at the base and minutely bifurcate (cleft) at the apex; there are no cornuti.

#### Female genitalia

The components, illustrated in a format comparable with Bland (1996) are shown in Fig. 3. The ovipositor lobes are large, flattened, leaf-like, heavily sclerotised plates, quite unlike any other British or Scandinavian species. In dried specimens they can often be seen projecting beyond the abdomen (Fig. 4). The signum is characteristic too,

being narrow and flat at one end and expanded at the other. The flat end has a strong, raised spine, and the bulbous end has 2-3 more.

Differences between the genitalia of similar species are shown in Table 1.

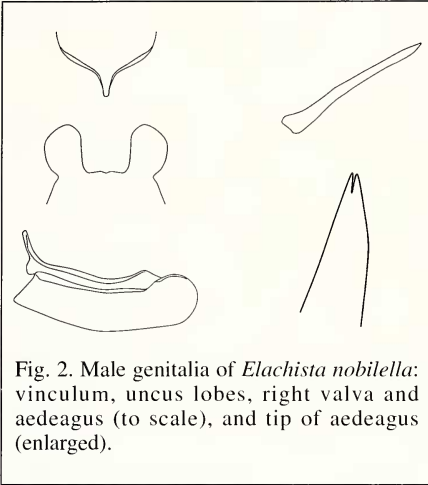


Fig. 2. Male genitalia of *Elachista nobilella*: vinculum, uncus lobes, right valva and aedeagus (to scale), and tip of aedeagus (enlarged).

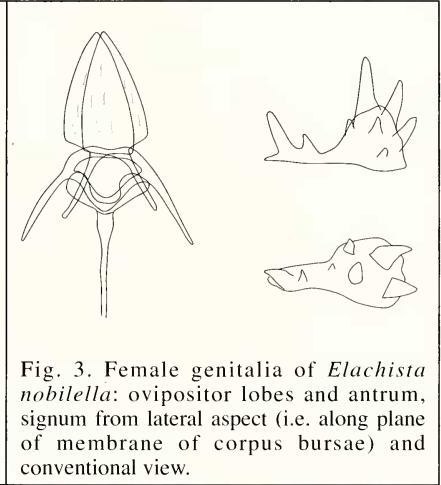


Fig. 3. Female genitalia of *Elachista nobilella*: ovipositor lobes and antrum, signum from lateral aspect (i.e. along plane of membrane of corpus bursae) and conventional view.



Fig. 4. *Elachista nobilella* – female abdomen

	<i>nobilella</i>	<i>gleichenella</i>	<i>apicipunctella</i>
<i>Male</i>			
uncus lobes	short, widely separated	vestigial	short, widely separated
valva – costa	with well developed hump distally	without hump	with moderately well developed hump distally
valva – apex	rounded, dorsally level with costa	rounded, and extending dorsally well above costa	rounded, dorsally level with costa, sacculus extended as point below apex <sup>1</sup>
aedeagus	slender, minutely cleft at apex	broad, with single, large cornutus and preapical “bend”	slender, acutely pointed at apex
<i>Female</i>			
ovipositor lobes	triangular, flattened, sclerotised	normal, fleshy	normal, fleshy
signum	asymmetrical, pointed at one end, bulbous at the other with several prominent teeth	elongate oval, broadest in middle, finely dentate	elongate, constricted medially, finely dentate

Table 1: Differences between the genitalia of *Elachista* species.

<sup>1</sup> Traugott-Olsen & Nielsen (1977) show the sacculus of *E. apicipunctella* to be produced into a point distally, below the cucullus. Bland (1996) and Pierce & Metcalfe (1935) show the cucullus smoothly curved into the sacculus without a point. Examination of Pierce's original material in the Natural History Museum, London, shows that a point is present.

### Biology

Traugott-Olsen & Nielsen (*loc. cit.*) give a number of species of grass and sedge as foodplants, including *Bromus*, *Festuca*, *Agrostis stolonifera*, *Holcus lanatus*, *Dactylis* and *Carex*. The most common foodplant, though, seems to be *Deschampsia flexuosa*. At the Hurtwood site this was the dominant grass and a number of moths were seen flying around and among its leaves. Several were seen to alight on the grass, run up and down the stem and to pause for a moment before moving on. Pale coloured swellings on the leaf were noticed but under the microscope were found not to be eggs. In the vast majority of elachistids the egg is laid flat on the surface of the grass, only in *Stephensia* is it partially inserted into the foodplant. The almost unique form of the ovipositor suggests that something different must happen in *nobilella*, either insertion into a leaf or between leaves, but this has not yet been observed.

The mine is said to be short and whitish and occurs from April to May. In *Deschampsia*, which has extremely narrow leaves, it might be assumed to be very low on the plant.

The moth is univoltine, flying from early June (or, in this case, late May) to early July.

The preferred habitat is stated to be “open, half-shaded places in deciduous forests, never or rarely in dark coniferous woods.” The exact circumstances of the capture of the White Downs' specimen cannot be recalled; although much of the site is open downland, it is thought that the capture site was along woodland edge. Hurtwood is best described as mixed woodland. Most of the deciduous trees are restricted to the ridge edges and surround mature Scots pine plantation with a bilberry understorey. The moths, and the probable foodplant, were found along fairly wide and open rides.

It is widely distributed in Europe and occurs throughout Denmark, in parts of Sweden and Norway and as far north as southern Finland. Traugott-Olsen & Nielsen's comment "but not from the southern parts of Britain" suggests that they expected it to occur here, and its discovery in two localities, in one of them in good numbers, is strong evidence that it is indeed resident in Britain.

### Conclusion

*Elachista nobilella* can be added to the British list and considered an overlooked resident. Due to its similarity to worn specimens of *gleichenella*, it is recommended that museum specimens are reappraised.

For those who are keen on such things, it is suggested that 601a is a suitable logbook number.

### Acknowledgements

We thank John Langmaid for confirming the identity of the moths and for commenting on the draft of this article, and Kevin Tuck and Martin Honey for access to the collections at the Natural History Museum, London.

### References

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### *Acontia lucida* (Hufn.) (Lep.: Noctuidae) the Pale Shoulder in Suffolk

Between 12 and 17 August 2004, a small but interesting number of migrant moths appeared at light in traps I was running here at Blythburgh. *Agrotis ipsilon* Hufnagel, Dark Sword-grass, *Spodoptera exigua* Hb., Pale Mottled Willow, *Udea ferrugalis* Hb., Rusty-dot Pearl, *Ematurga atomaria* L., Common Heath, *Mythimna albipuncta* D.& S., White-point, all with the exception of the latter, suggested a degree of migratory movement.

On the night of 18 August a very violent storm passed over the area around dusk, the first wave of which led me to turn off the lamps as well as my computer, and I expected to have to find the Robinson Trap components all over the field in the morning. The first part of the electrical storm passed and I turned the traps back on but with the passing of another very squally period a bit later in the night, I did not hold out much hope of more than drowned moths in the morning. The old metal Robinson traps stood up to the worst that the weather could throw at them and were